

APPENDIX A

Version with markings to show changes made

1. (Amended) An assembly comprising:
 - a first semiconductor die having at least one lead on [the]an active surface thereof, said at least one lead having at least one conductive pad disposed thereon, said at least one conductive pad having an upper surface, having a thickness and extending above [the facing]said active surface of said first semiconductor die [the]said thickness of said at least one conductive pad, said first semiconductor die substrate having a passivation layer disposed on [the]said active surface [of said first semiconductor die]thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via, and [the]said first semiconductor die having a layer of adhesive covering at least a portion of said passivation layer on [the]said active surface, said layer of adhesive having a thickness; and
 - a second substrate die having at least one lead on a facing surface thereof, said at least one lead of said second substrate die having at least one conductive pad disposed thereon, said at least one conductive pad of said second substrate die having an upper surface, having a thickness and extending above [the]said facing surface of said second substrate die, [the]said thickness of said at least one conductive pad of said second substrate die being at least [the]a combined thickness of [the]said layer of adhesive covering at least a portion of said passivation layer on [the]said active surface of said first semiconductor die and [the]a remaining portion of [the]said at least one via having said at least one conductive pad of said first semiconductor die extending [there into of the thickness of the passivation layer on the active surface of said first semiconductor die,]thereinto; wherein said second substrate die being attached to said first semiconductor die by said adhesive layer of said first semiconductor die, said [second substrate]first semiconductor die having [the]said upper surface of said at least one conductive pad on said at least one lead

[of said first semiconductor die]substantially forming [moveable]movable, electrical contact without mechanical attachment with [the]said upper surface of said at least one conductive pad on said at least one lead of said second substrate die, said [moveable]movable electrical contact provided when said second substrate die is permanently attached to said first semiconductor die by said layer of adhesive.

2. (Amended) The[semiconductor] assembly of claim 1, wherein at least one of said active surface of said first semiconductor die and said facing surface of said second substrate [facing surface]die includes at least one groove thereon.

3. (Amended) The[semiconductor] assembly of claim 1, wherein at least one of said first semiconductor die and said second substrate die comprises a flip chip.

4. (Amended) The[semiconductor] assembly of claim 1, wherein at least one of said first semiconductor die and said second substrate die comprises a silicon wafer.

5. (Amended) An assembly comprising:
a first semiconductor die having at least one lead on [the]an active surface thereof, said at least one lead having at least one conductive pad disposed thereon, said at least one conductive pad having an upper surface, having a thickness and extending above [the]said active surface of said first [substrate the]semiconductor die said thickness of said at least one conductive pad, said first substrate having a passivation layer disposed on [the]said active surface [of said first substrate]thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via; and
a [second]first substrate having at least one lead on a facing surface thereof, said at least one lead of said [second]first substrate having at least one conductive pad disposed thereon, said at

least one conductive pad of said [second]first substrate having an upper surface, having a thickness and extending above [the]said facing surface of said second substrate, [the]said thickness of said at least one conductive pad of said [second]first substrate being at least [the]a thickness of [the]a remaining portion of [the]said at least one via having said at least one conductive pad of said first semiconductor die extending [there into of the thickness of the passivation layer on said active surface of said first semiconductor die]thereinto, said first semiconductor die being attached to said second substrate by an encapsulation material substantially surrounding said first semiconductor [die]and a portion of said second substrate, said [second]first substrate having [the facing]said upper surface of said at least one conductive pad on said at least one lead of said first semiconductor die substantially forming [moveable]movable, electrical contact without mechanical attachment with [the]said upper surface of said at least one conductive pad on said at least one lead of said [second]first substrate.

6. (Amended) An assembly comprising:

- a first semiconductor device having at least one lead on a first side thereof, said at least one lead having at least one conductive pad disposed thereon having a substantially flat surface thereon, having a thickness and extending above [the]said first side of said first [substrate the]semiconductor die said thickness of said at least one conductive pad, said first semiconductor device having a passivation layer disposed on said first side thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via, and said first semiconductor device having a layer of adhesive covering at least a portion of said passivation layer on said first side, said layer of adhesive having a thickness; and
- a [second substrate]first semiconductor die having at least one lead on a first side thereof, said at least one lead of said [second]first substrate having at least one conductive pad disposed thereon, said at least one conductive pad of said [second]first substrate having a

substantially flat surface thereon, having a thickness and extending above [the]said first side of said [second]first substrate, [the]said thickness of said at least one conductive pad of said [second]first substrate being at least [the]a combined thickness of [the]said layer of adhesive covering said at least a portion of said passivation layer on said first side of said first semiconductor device and [the]a remaining portion of [the]said at least one via having said at least one conductive pad of said first semiconductor device extending [there into of the thickness of the passivation layer on said first side of said first semiconductor device, said second]thereinto, said first substrate being juxtaposed to said first [substrate]semiconductor die by said layer of adhesive, said first semiconductor device having said substantially flat surface of said at least one conductive pad on said at least one lead of said first semiconductor device forming [moveable]movable, electrical contact without mechanical attachment with said substantially flat surface of said at least one conductive pad on said at least one lead of said [second]first substrate, said [moveable]movable, electrical contact provided when said [second]first substrate is permanently juxtaposed to said first semiconductor device by said layer of adhesive.

7. (Amended) A semiconductor assembly comprising:

- a first substrate having at least one lead on a facing surface thereof, said at least one lead having at least one conductive pad disposed thereon, said at least one conductive pad having an upper surface, having a thickness and extending above [the]said facing surface of said first substrate [the]said thickness of said at least one conductive pad, said first substrate having a passivation layer disposed on said facing surface [of said first substrate]thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via; and
- a second substrate having at least one lead on a facing surface thereof, said at least one lead of said second substrate having at least one conductive pad disposed thereon, said at least one conductive pad of said second substrate having an upper surface, having a thickness

and extending above [the]said facing surface of said second substrate, [the]said thickness of said at least one conductive pad of said second substrate being at least [the]a thickness of [the]a remaining portion of [the]said at least one via having said at least one conductive pad of said first substrate extending [there into of the thickness of the passivation layer on said facing surface of said first substrate, wherein]thereinto, one of said first substrate [or]and said second substrate being attached to another one of said first substrate [or]and said second substrate by a glob top covering said one of said first substrate and said second substrate and adhering to at least a portion of [the]said facing surface of said another one of said first substrate and said second substrate, said one of said first substrate and said second substrate having [the]said upper surface of said at least one conductive pad on said at least one lead thereof substantially forming movable, electrical contact without mechanical attachment with said upper surface of said at least one conductive pad on said at least one lead of said another one of said first substrate [substantially forming moveable, electrical contact without mechanical attachment with the upper surface of said at least one conductive pad on said at least one lead of]and said second substrate, said [moveable]movable, electrical contact provided when said one of said first substrate and said second substrate is permanently attached to said another one of said first substrate and said second substrate by said glob top.

8. (Amended) [An] A semiconductor assembly comprising:
- a first semiconductor device having at least one lead on a first side thereof, said at least one lead having at least one conductive pad disposed thereon having a substantially flat surface thereon, having a thickness and extending above [the]said first side of said first [substrate the]semiconductor device said thickness of said at least one conductive pad, said first semiconductor device having a passivation layer disposed on said first side thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via; and

a second [substrate]semiconductor device having at least one lead on a first side thereof, said at least one lead of said second [substrate]semiconductor device having at least one conductive pad disposed thereon, said at least one conductive pad of said second [substrate]semiconductor device having a substantially flat surface thereon, having a thickness and extending above [the]said first side of said [first]second semiconductor device, [the]said thickness of said at least one conductive pad of said second [substrate]semiconductor device being at least [the]a thickness of a remaining portion of [the]said at least one via having said at least one conductive pad of said first [substrate]semiconductor device extending [there into of the thickness of the passivation layer on said first side of said first]thereinto, said second semiconductor device[, said second substrate] being juxtaposed to said first semiconductor device [having]with said substantially flat surface of said at least one conductive pad on said at least one lead of said first semiconductor device substantially movably electrically contacting without mechanical attachment said substantially flat surface of said at least one conductive pad on said at least one lead of said second [substrate]semiconductor device substantially making electrical contact therewith, said first semiconductor device being attached to said second [substrate]semiconductor device by an encapsulation material substantially surrounding said first semiconductor device and a portion of said second [substrate]semiconductor device.

9. (Amended) The semiconductor assembly of claim [6]8, wherein at least one of said first side of said first semiconductor device and said first side of said second [substrate]semiconductor device includes at least one groove thereon.

10. (Amended) The semiconductor assembly of claim [6]9, wherein at least one of said first semiconductor device and said second [substrate]semiconductor device comprises a flip chip.

11. (Amended) The semiconductor assembly of claim [6]9, wherein at least one of said first semiconductor device and said second [substrate]semiconductor device comprises a silicon wafer.

12. (Amended) An assembly[,] comprising:
a first semiconductor device having a plurality of leads on a first side thereof, each lead of said plurality of leads having a conductive pad disposed thereon [disposed]in a substantially[a] horizontal plane, each conductive pad having a substantially flat surface disposed in said substantially horizontal plane thereon, having a thickness and extending above [the]said first side of said first semiconductor device [the]said thickness of said each conductive pad, said first semiconductor device having a passivation layer disposed on said first side [of said first semiconductor device]thereof having a thickness greater than [the]said thickness of said each conductive pad, said passivation layer having at least one via therein for said each[said] conductive pad, said each conductive pad extending into and through only a portion of said at least one via, and said first semiconductor device having a layer of adhesive covering at least a portion of said passivation layer on said first side, said layer of adhesive having a thickness; and
a second [substrate]semiconductor device having a plurality of leads on a first side thereof, each lead of said plurality of leads of said second [substrate]semiconductor device having a conductive pad disposed thereon in a substantially[a] horizontal plane, each conductive pad of said second [substrate]semiconductor device having a substantially flat surface disposed in said substantially horizontal plane thereon, having a thickness and extending above [the]said first side of said second [substrate]semiconductor device, [the]said thickness of said each conductive pad of said second [substrate]semiconductor device being at least [the]a combined thickness of [the]said layer of adhesive covering at least a portion of said passivation layer on said first side of said first semiconductor device and a remaining portion of [the]said each at least one via having said conductive pad of said first semiconductor device extending [there into of the thickness of the passivation layer

on said first side of said first]thereinto, said second semiconductor device[, said second substrate] being juxtaposed to said first semiconductor device by said layer of adhesive, said first semiconductor device having at least one conductive pad [located]disposed on at least one lead of said plurality of leads of said first semiconductor device forming [moveable]movable electrical contact without mechanical attachment with at least one conductive pad on at least one lead of said plurality of leads of said second [substrate]semiconductor device, said [moveable]movable, electrical contact provided when said second [substrate]semiconductor device is permanently attached to said first semiconductor device by said layer of adhesive.

13. (Amended) The[semiconductor] assembly of claim 12, wherein at least one of said first side of said first semiconductor device and said first side of said second [substrate]semiconductor device includes at least one groove thereon.

14. (Amended) The[semiconductor] assembly of claim 12, wherein at least one of said first semiconductor device and said second [substrate]semiconductor device comprises a flip chip.

15. (Amended) The[semiconductor] assembly of claim 12, wherein at least one of said first semiconductor device and said second [substrate]semiconductor device comprises a silicon wafer.

16. (Amended) An assembly comprising:
a [first]silicon substrate having a plurality of leads on a first side thereof, each lead of said plurality of leads having a conductive pad disposed thereon in a substantially[a] horizontal plane, each conductive pad having a substantially flat surface disposed in said substantially horizontal plane thereon, having a thickness and extending above [the]said first side of said [first]silicon substrate [the]said thickness of said each conductive pad,

said[first] silicon substrate having a passivation layer disposed on said first side [of said first silicon substrate]thereof having a thickness greater than [the]said thickness of said each conductive pad, said passivation layer having at least one via therein for said each said conductive pad, said each conductive pad extending into and through only a portion of said at least one via, and said[first] silicon substrate having a layer of adhesive covering at least a portion of said passivation layer on said first side, said layer of adhesive having a thickness; and

at least one semiconductor device having a plurality of leads on a first side thereof, each lead of said plurality of leads of said at least one semiconductor device having a conductive pad disposed thereon in a substantially[a] horizontal plane, each conductive pad of said at least one semiconductor device having a substantially flat surface disposed in said substantially horizontal plane thereon, having a thickness and extending above [the]said first side of said at least one semiconductor device, [the]said thickness of said each conductive pad of said at least one semiconductor device [substrate]being at least [the]a combined thickness of [the]said layer of adhesive covering at least a portion of said passivation layer on said first side of said [first]silicon substrate and a remaining portion of [the]said each at least one via having said each conductive pad of said[first] silicon substrate extending [there into of the thickness of the passivation layer on said first side of said first silicon substrate]thereinto, said at least one semiconductor device being juxtaposed to said [first]silicon substrate by said layer of adhesive, said [first]silicon substrate having[at least one of] said conductive pad on at least one lead of said plurality of leads on said [first]silicon substrate forming [moveable]movable electrical contact without mechanical attachment with [at least one]said conductive pad on at least one lead of said plurality of leads of said at least one semiconductor device, said [moveable]movable, electrical contact provided when said at least one semiconductor device is permanently attached to said[first] silicon substrate by said layer of adhesive.

17. (Amended) The[semiconductor] assembly of claim 16, wherein at least one of said first side of said[first] silicon substrate and said first side of said at least one semiconductor device includes at least one groove thereon.

18. (Amended) The[semiconductor] assembly of claim 16, wherein at least one of said[first] silicon substrate and said at least one semiconductor device comprises a flip chip.

19. (Amended) The[semiconductor] assembly of claim 16, wherein at least one of said [first]silicon substrate and said at least one semiconductor device comprises a silicon wafer.

20. (Amended) An assembly comprising:
a [first]substrate having at least one lead on a facing surface thereof, said at least one lead having at least one conductive pad disposed thereon, said at least one conductive pad having an upper surface, having a thickness and extending above [the]said facing surface of said [first]substrate [the]said thickness of said at least one conductive pad, said[first] substrate having a passivation layer disposed on said facing surface [of said first substrate]thereof having a thickness greater than [the]said thickness of said at least one conductive pad, said passivation layer having at least one via therein, said at least one conductive pad extending into and through only a portion of said at least one via; and at least one semiconductor device having at least one lead on [the]an active surface thereof having at least one bond pad disposed thereon, said at least one bond pad of said at least one semiconductor device having an upper surface, having a thickness and extending above [the facing]said active surface of said at least one semiconductor device, said at least one semiconductor device having a layer of adhesive having a thickness on at least a portion of said active []surface thereof, said at least one semiconductor device being attached to said [first]substrate by said layer of adhesive[of said at least one semiconductor device], said[at least one semiconductor device having the] upper surface of said at least one conductive pad on said at least one lead of said [first]substrate

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substantially forming [moveable]movable, electrical contact without mechanical attachment with [the]said upper surface of said at least one bond pad on said at least one lead of said at least one semiconductor device, said [moveable]movable electrical contact provided when said at least one semiconductor device is permanently attached to said[first] substrate by said layer of adhesive.